Comprehensive Business and Technology Analysis of Machine Learning

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Executive Summary

Machine Learning (ML), a major component of Artificial Intelligence (AI), is rapidly evolving and significantly improving growth, profits, and operational efficiencies in virtually every industry. This is being driven – in large part – by continuing improvements in processor price/performance and the associated innovations in software and algorithms to harness these new processors.

In 2016, ML received the most investment in AI, with Computer Vision (CV) and Natural Language Processing (NLP) as leaders. Industries with the most proactive ML-enabled digital transformation and the highest margins include high-tech and telecommunications, automotive/manufacturing, banking and financial services, oil & gas and utilities, consumer/retail, and healthcare.

The ML as a Service market alone is estimated to grow from US$613.4 million in 2016 to U$3.76 billion by 2021, at a CAGR of 43.7%. The ML market for processors in the datacenter is expected to be between $7.7 billion to $12.2 billion by 2022. Also, some current estimates indicate that inference tasks are estimated to have a larger fraction of investments over training tasks. But this could change with industry disruptions where training and inference become part of one virtuous cycle. In any case, investments in ML are widespread, very attractive, and continue to grow very rapidly. Even firms with limited financial resources are leveraging ML for competitive advantage.

But AI, ML, and Deep Learning (DL – a subset of ML) require complex technology ecosystems (applications, middleware, and software/hardware infrastructure) to deploy. As these technologies evolve and the lines between them continue to often blur, there is an urgent need for a rigorous, comprehensive and common business and technology architecture for ML.

To this end, Cabot Partners has published a comprehensive report on the ML landscape and developed an end-to-end Enterprise ML Blueprint that includes Industry Applications, APIs, Software Frameworks, Algorithms, Libraries, Development Tools, Data Infrastructure, Operating System, and Hardware (ASICs, CPUs, FPGAs, GPUs, SoCs, TPUs, Interconnects, and Storage).

The report delves into detailed discussions on the various algorithms used in a variety of use cases in different vertical-industry segments. Also assessed in detail are the products, roadmaps, and strategies from leading, established processor vendors—AMD, ARM, Google, Intel, NVIDIA, Qualcomm, Xilinx—and some innovative startups which could potentially challenge the incumbents.

This 70-plus-page report, with 25 figures and four Appendices, focuses on ML in enterprises, assesses key ecosystem participants, and provides in-depth analyses, detailed market insights, and prioritization for every major component of each layer in the Blueprint.

For pricing information, please email your inquiry to info@cabotpartners.com.

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